13 May 1977

MEMORANDUM FOR THE RECORD

SUBJECT: Field Station Unattended Operation

1. The purpose of this memorandum is to provide information related to actions taken and proposed in relation to implementation of unattended field terminal operation. Attachment 1 outlines the equipment configuration and operational aspects of the FSUO. A cost breakdown on an individual station basis is provided in Attachment 2.

2. It is proposed that ten FSUO units (recorder/controller, M-40 and KG-34 safe) be procured for near term installation. OC-O/M-76-315, dated 22 November 1976, lists [redacted] stations where the installation of an OCR/PTP would be beneficial. Depending on the transmission and cryptographic capability, it is suggested that most of these same stations (excluding those scheduled for AFTs) would benefit from a FSUO installation. 25X1

3. OC-CS personnel have recently stated that NACSEM 5100 standards should be adhered to for the FSUO and that a memorandum is forthcoming on the subject. The vendor for the controller/recorder has stated that his company does not have the capability, nor desire, to provide a TEMPEST configuration. Therefore, if testing of the controller/recorder shows that the unit requires TEMPEST protection, it may be necessary to house it in a RFI box.

4. Mr. [redacted] is the contact for any additional information on this subject. 25X1

[redacted] 25X1

Attachments:
As Stated

CONFIDENTIAL

Attachment 1

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I OBJECTIVES:

The objectives of the FSUO are:

*To expedite delivery of messages to field station action offices.

*To reduce use of BRAVO channels with resultant savings of base station personnel and equipment.

*To provide time for personnel to perform other OC duties; e.g., additional time for equipment preventive maintenance, station management, etc.

II CONCEPT:

The basic FSUO equipment concept is shown in Figure 1. During the period that a part-time communications center is unattended (closed), routine, and priority precedence traffic will be transmitted and recorded for processing during normal duty hours. Traffic transmitted at a 75 bps rate during unattended periods will be recorded onto a tape cartridge contained within a safe and later printed at a 2400 bps rate on a medium speed printer under operator control. For stations operating in a [redacted] environment, a punched paper tape could be provided to non-Agency customers. Higher precedence message handling; e.g., call-ins, etc., will not change.

25X1

III EQUIPMENT & OPERATION:

The implementation equipment and circuitry for unattended operation is:

*A full-period, reliable circuit, on-line crypto protected.

*A data storage unit.

*A M-40 teletype.

*An approved security container.

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The proposed installation would use KW-7 crypto with both the KW-7 and the data storage unit secured in a KG-34 safe. In the unattended mode, data would continue to be received and recorded by the data storage device at 10 cps (75 bps transmission). When the station reverts to normal on-line operation, the previously recorded traffic would be printed on a Teletype M-40 printer at a 2400 bps rate. Each hour of traffic recorded at 75 bps would be printed on the M-40 printer in less than three minutes.

The recording and storage medium is a Qantex cartridge recorder with a microprocessor controller which will provide the proper communications line and the local I/O interfaces. The controller will contain stored programs to support message integrity and accountability functions and to provide the required print/output option capabilities.

The equipment package configuration is shown in Figure 2 with the KW-7 and storage devices installed in a KG-34 safe. The KG-34 safe is a product of the [redacted] Company measuring 30 1/2" x 22" x 39" and is approved as a Class 5 security container by NSA. The signal and power line runs shown in the drawing are tentative, however, field installations would adhere to existing installation standards. 25X1

IV PROTOTYPE TEST:

A prototype FSUO, configured to simulate a typical field station operation was installed at Headquarters on 8 February 1977. Testing was conducted for a month with the equipment connected to a MAX-III port through KW-7 crypto with good results.

After removal from the Headquarters installation, the FSUO equipment was shipped to [redacted] for a full field test. 25X1
25X1 The testing in [redacted] is being undertaken to determine if any additional fine tuning is required for the controller logic to make the unit fully applicable for field use.

Some required changes, resulting from the prototype evaluation, have been identified and would be implemented in field units. Specifically, the changes will 1) tighten up the straggler protection logic, 2) provide a block/message integrity check by embedding a unique message identifier in each block of a message, 3) provide a retrieval by transmission identifier capability, 4) provide three print options (all, [redacted], 5) provide 25X1
power fail restart capability, and 6) remove the skip message option.

V FSUO APPLICATION:

The FSUO can be implemented at any station which has a reliable full period circuit capability. A cursory survey covering [redacted] stations connected to MAX-III was performed to determine the approximate in queue wait time and delay in delivery to action offices. Attachment 1 shows the results of the survey for seven representative stations. On the assumption that all of the priority and routine messages could have been transmitted in the unattended mode, delivery time would be bettered by the difference of the time of transmission of the last message in queue and the time required to print all messages recorded and printed at 2400 bps. That is, it would require three minutes at 2400 bps to print the traffic received in one hour at 75 bps. For example, [redacted] statistics for a Saturday RADAY reveal that a cast of 57 messages required a run-time of 2 hours and 20 minutes. However, in the unattended mode of operation it would require 5.5 minutes to print the entire 57 messages.

Consequently, implementation of unattended operation would greatly improve distribution of traffic and in some instances reduce the need for overload channels from MAX/ARS. Equally important, however, is the unattended operation would allow later opening times for stations which now begin daily operation up to two hours before normal office hours. Saturday, Sunday, and holiday hours could also be decreased significantly by eliminating the "cast" running time.

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